

Date: Friday, 2/23/2007 1:47:59 PM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: MID TUBE ASSEMBLY
Job Number	: 30927		
Estimate Number	: 10469		
P.O. Number	: <i>N/A</i>	Part Number	: D3391023
This Issue	: 2/23/2007	Drawing Number	: D3391 <del>UNDER REVIEW</del> <i>PH 07.02.26</i>
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: <i>N/A</i>	Drawing Revision	: E
Previous Run	: 29209	Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 3/21/2007
Checked & Approved By	: <i>[Signature]</i>	Qty:	1 Um: Each
Comment	: Est. A 05.10.20 New Issue KJ/EC Est. B 06.02.10 ECN773 dwg rev.D EC		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D25001100.	Skidtube Extrusion
-----	------------	--------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
 SKIDTUBE EXTRUSION

Pick:

Qty	Part Number	Description
1	D2500-1-100	Extrusion

Batch

*B24593 BE 07-02-27*

2.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
-----	----------------	-------------------------



Comment: LANDING GEAR RESOURCE 1

- 1-Cut tube to finish length as per Dwg D3391
- 2-Identify as D3391-023
- 3-Drill pilot holes using DT8796 as per Dwg D3391
- 4-Open float bag holes to Ø0.250" as per Dwg D3391 using DT8796D visual aid Jig
- 5-C'sink float bag holes as per Dwg D3391
- 6-Open remaining holes to Ø0.375"

7-Rmove .030" from Fwd indexing Ridge as per Dwg D3391

8-Remove indexing ridge on Fwd &amp; Aft end of skidtube as per Dwg D3391

9-Deburr

- 10-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,
- 11-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J"
- 12-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.250" and c'sink (20 holes) as per Dwg D3391

13-Open .375" holes to .438"

14-Deburr and blow out all chips from inside tube

*BE 07-02-27*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 30927

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

3.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*DP 7-3-2*

4.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

*Pr 1/11 07-03-05*

5.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*BE 07-03-14*

6.0

D33891

Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEB

Pick:

Qty

Part Number

Description

Batch

1

D3389-1

Web

*B36790*

A/R

Sikaflex-241/-291

*m103497*

Sikaflex expire date:

*67-10-01*

Start: *07-03-14* Time: *7:30 am*

Finish: *07-03-14* Time: *10:30 am*

*Pr 07-03-14*

7.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Bond web in place as per Dwg D3391 & QSI 015.

Adhere for 12 hours)

*Pr 07-03-14*

8.0

POWDER COATING

POWDER COATING



*M 103706*



*①*

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

*m-l*

*07/03/31*

9.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



*m-l 07 04 02*

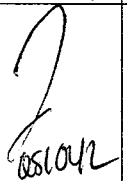
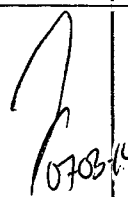
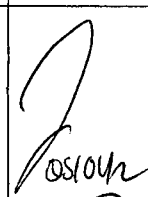

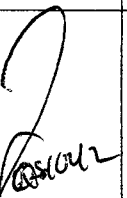
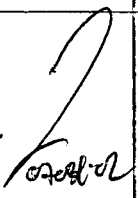
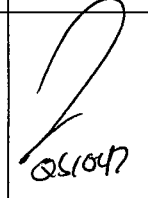
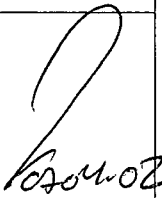


*①*

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3391-023 PAR #: NA Fault Category: Prod/Landing Gear NCR: Yes No DQA: ED Date: 07/04/05  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: <u>30927</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07/03/14	6.0	1x 3389-1 is scrap. For some reason <del>the</del> one of the Fuel holes is a 1/2" off center. Pins don't pass through.		Scrap; destroy; replace. Ensure when webs are made i. inspected check the holes are all centered.	Pne 07-03-14			
07/04/02	10.0 11.0	Mixed up inserts NAS133C3KB166 NAS133C3KB116		Drill out inserts and replace with the correct insert	M-k 07/04/02			

NOTE: Date & initial all entries

Date: Friday, 2/23/2007 1:47:59 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 30927

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

NAS1330C3KB116

Insert



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Insert

Pick:

Qty

Part Number

Description

Batch

40 ~~20~~

NAS1330C3KB116

Insert

M101396  
~~M100732~~

M.A 07/04/02

11.0

NAS1330C3KB166

INSERT



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

RivnuT

Pick:

Qty Part Number

Description

Batch

20 ~~10~~

NAS1330C3KB166

Insert

M100732  
~~M101396~~

M.A 07/04/02

12.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1  
Install inserts as per Dwg D3391

M.A

07/04/02

13.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP  
Inspect each insert using DT8821

For 04-02

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Identify and Stock  
Location: \_\_\_\_\_

M.A B3-309

07/04/02

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

①  
07/04/05

Job Completion



U 07-04-04

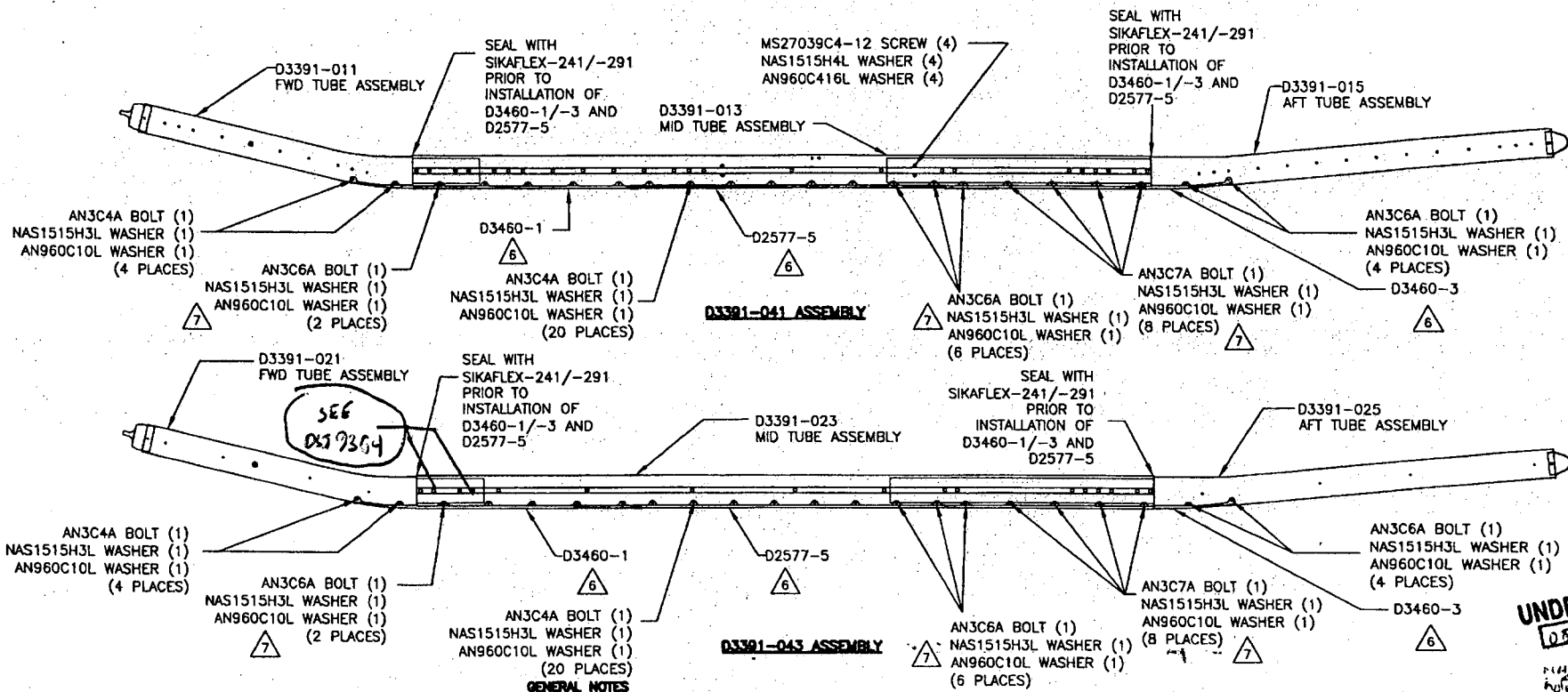
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# **D3391-041/-043 FLOAT SKITUBE ASSEMBLY PARTS LIST**

QTY - 041	QTY - 043	PART NUMBER	DESCRIPTION
X	X	D3391-041	FLOAT SKITUBE ASSEMBLY
		D3391-043	FLOAT SKITUBE ASSEMBLY
1		D3391-011	FWD TUBE ASSEMBLY
1		D3391-013	MID TUBE ASSEMBLY
1		D3391-015	AFT TUBE ASSEMBLY
	1	D3391-021	FWD TUBE ASSEMBLY
	1	D3391-023	MID TUBE ASSEMBLY
	1	D3391-025	AFT TUBE ASSEMBLY
24	24	AN3C4A	BOLT
12	12	AN3C6A	BOLT
8	8	AN3C7A	BOLT
44	44	NAS1515H3L	WASHER
44	44	AN960C10L	WASHER
4		MS27039C4-12	SCREW
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER
1	1	D2577-5	WEARSHOE
1	1	D3460-1	WEARSHOE
1	1	D3460-3	WEARSHOE

- GENERAL NOTES**
- ALL DIMENSIONS ARE IN INCHES
  - TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
  - FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1" POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
  - SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
  - USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL 'E' SIZE HOLES (#0.250-#0.257) FOR WEARSHOE INSERTS. C/SINK #0.391/#0.425 x 100" AS APPLICABLE AND INSTALL INSERTS EXCEPT WHERE INDICATED.
  - APPLY A LAYER OF SIKAFLEX -241/-291 ADHESIVE BETWEEN THE BOTTOM OF THE SKITUBE ASSEMBLY AND THE WEARPLATES
  - DO NOT TORQUE, HAND TIGHTEN ONLY

E	06.04.25	CHANGE TOLERANCE,EASE MANUFACTURE
D	06.01.23	UPDATE TOLERANCE, CHANGE HOLE SIZE
C	05.09.27	LENGTHEN AFT EXTENSION
B	05.06.10	DRAWING UPDATES
A	05.02.07	NEW ISSUE

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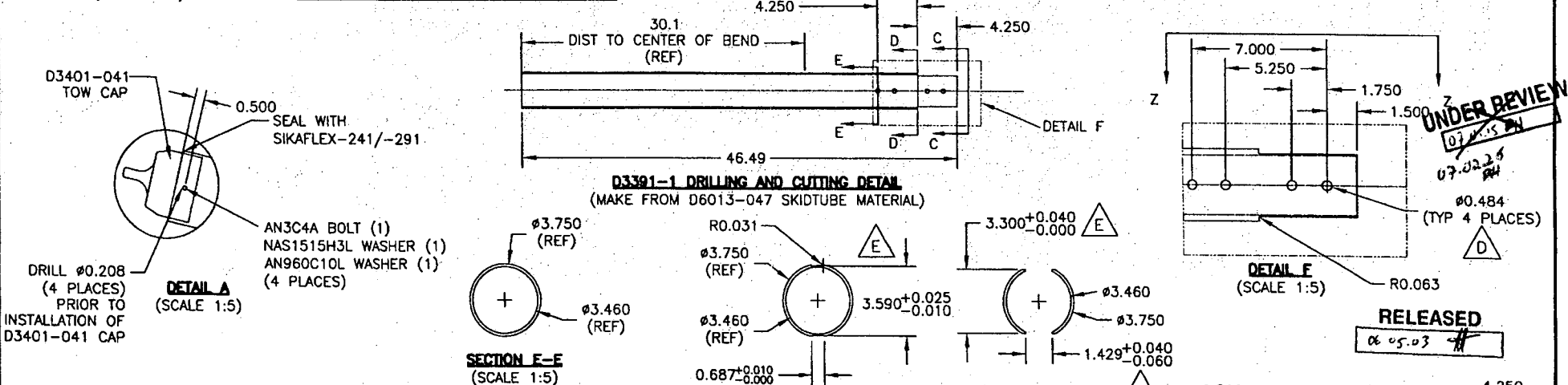
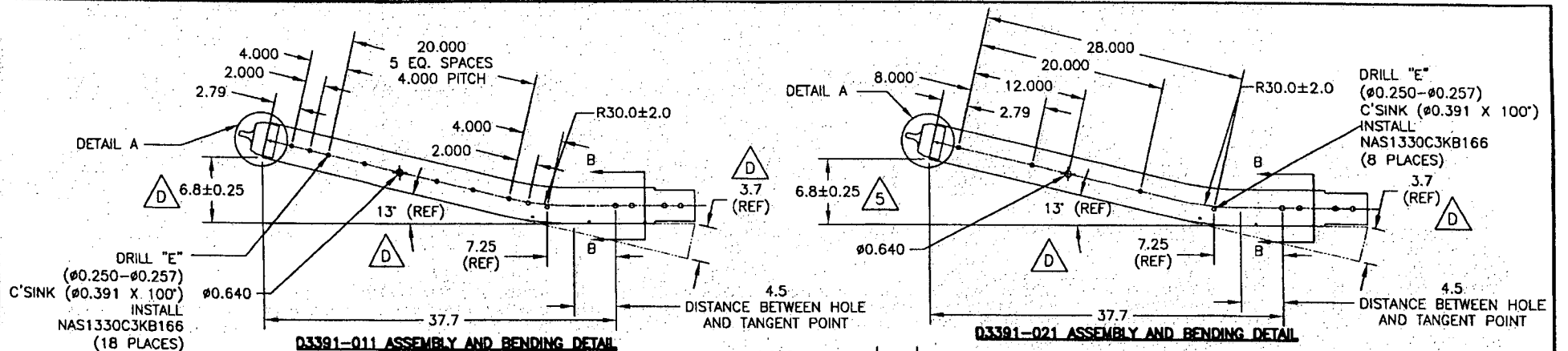
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CHECKED	#	APPROVED	#	D3391	SHEET 1 OF 5
DATE	06.04.25	TITLE	412 FLOAT SKITUBE	SCALE	NFS

**UNDER REVIEW**

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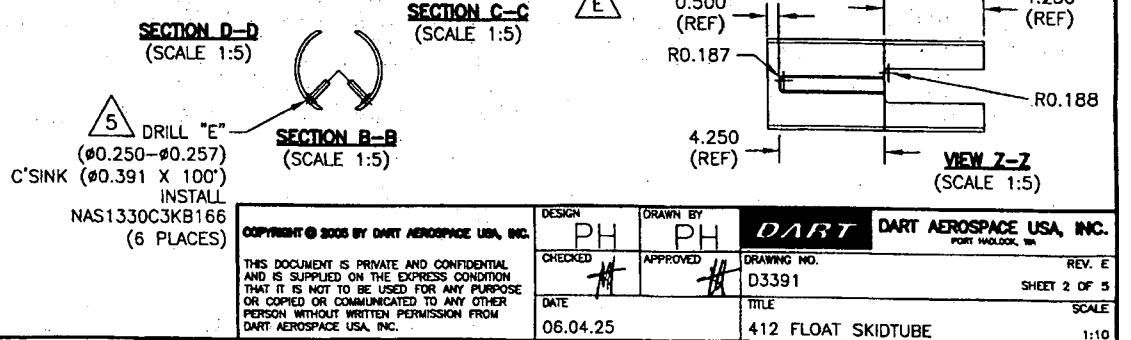
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D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
4	4	AN3C4A	BOLT
4	4	NAS1515H3L	WASHER
4	4	AN960C10L	WASHER
24	14	NAS1330C3KB166	INSERT



DESIGN PH PH DART DART AEROSPACE USA, INC. PORT HADLOCK, MA

CHECKED PH APPROVED PH DRAWING NO. D3391 REV. E SHEET 2 OF 5

DATE 06.04.25 TITLE 412 FLOAT SKIDTUBE SCALE 1:10

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WORK ORDER 30927

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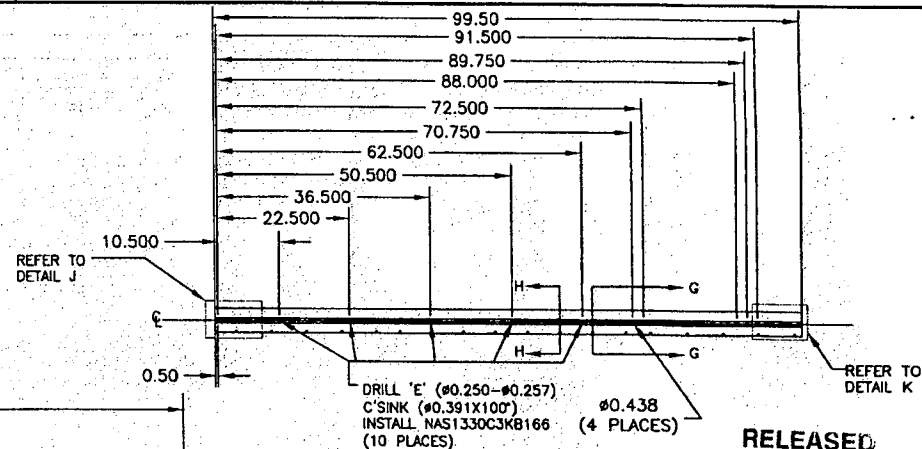
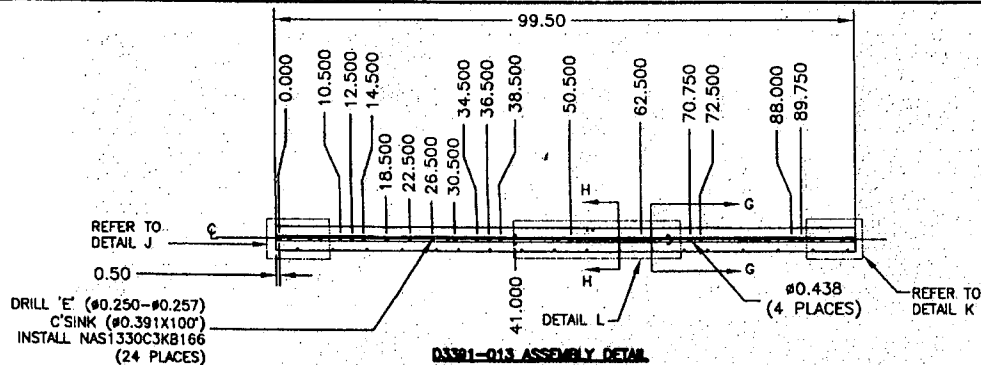
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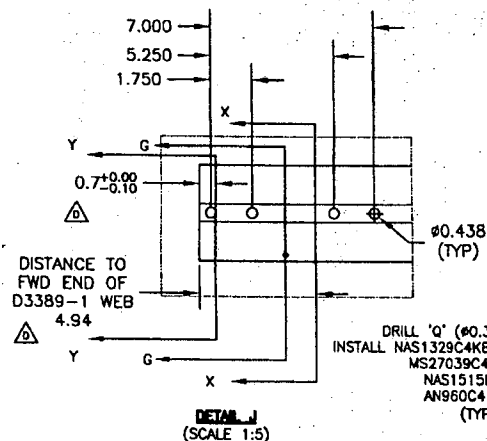
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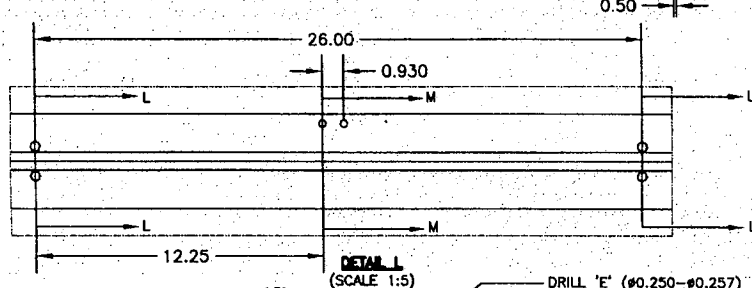


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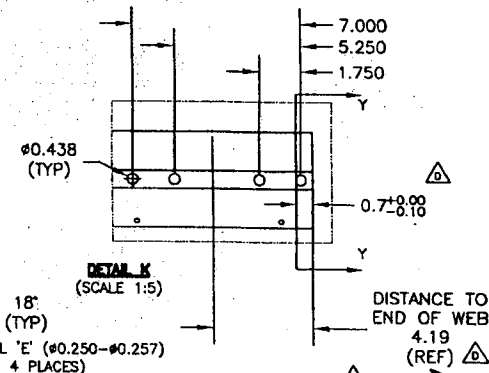
06-05-06



DRILL 'Q' (#0.332-#0.338)  
INSTALL NAS1329C4KB140 INSERT  
MS27039C1-08 SCREW  
NAS1515H4L WASHER  
AN960C416L WASHER  
(TYP 4 PLACES)



DRILL 'E' (#0.250-#0.257)  
C'SINK (#0.391X100)  
INSTALL NAS1330C3KB116 INSERT  
MS27039C1-08 SCREW  
NAS1515H3L WASHER  
AN960C10L WASHER  
(TYP 4 PLACES)



UNDER REVIEW

02-02-06

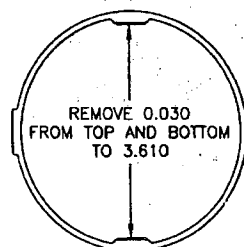
# D3391-013/-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 013	QTY - 023	PART NUMBER	DESCRIPTION
X		D3391-013	MID TUBE ASSEMBLY
	X	D3391-023	MID TUBE ASSEMBLY
1	1	D2500-1-100	EXTRUSION
1	1	D3389-1	WEB
24	20	NAS1330C3KB116	INSERT
24	10	NAS1330C3KB166	INSERT
4		NAS1329C4KB140	INSERT
4		NAS1515H3L	WASHER
4		AN960C10L	WASHER
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER
4		MS27039C1-08	SCREW
4		MS27039C4-08	SCREW

## D3391-013/-023 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/293 PER QSR 016

SECTION L-L  
(SCALE 1:4)

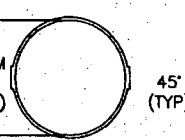


SECTION X-X  
(SCALE 1:2)

SECTION M-M  
(SCALE 1:4)

REMOVE 0.225  
FROM TOP AND BOTTOM  
TO 3.800  
(0.7 FROM BOTH ENDS)

SECTION U-U  
(SCALE 1:4)



SECTION G-G  
(SCALE 1:4)

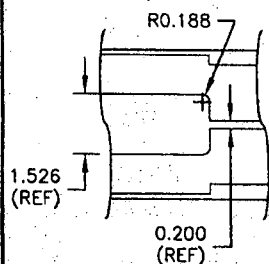
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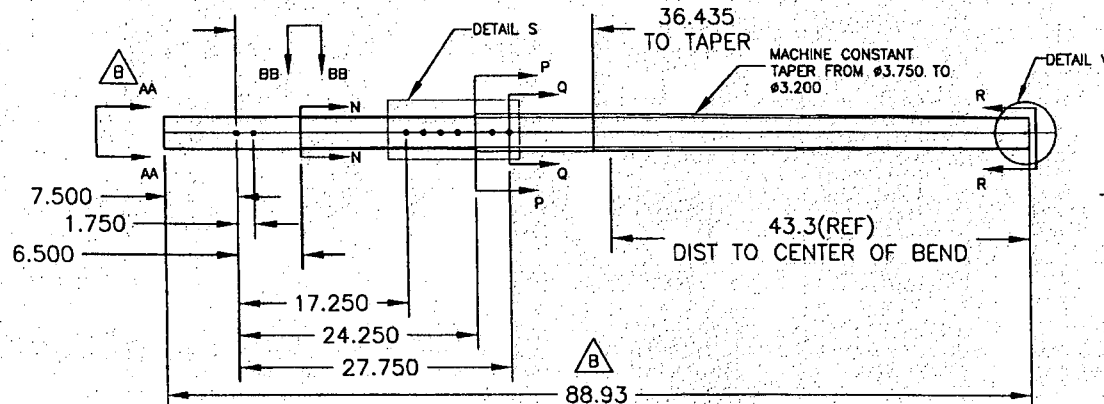
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DATE 06.04.25	TITLE 412 FLOAT SKIDTUBE	SCALE 1:20	

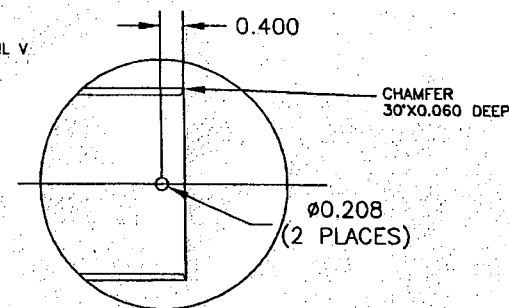
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WORK ORDER  
30927



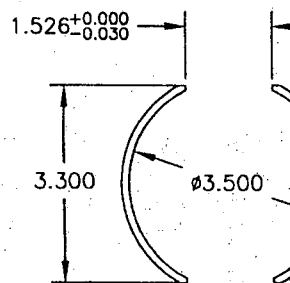
VIEW BB-BB  
(SCALE 1:3)



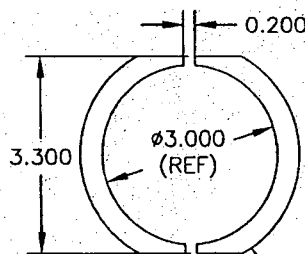
D3391-3 AFT DRILLING AND CUTTING DETAIL  
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)



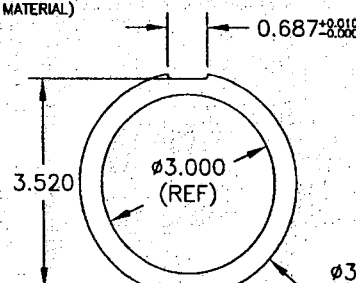
DETAIL V  
(SCALE 1:2)



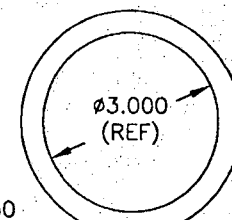
SECTION AA-AA  
(SCALE 1:2)



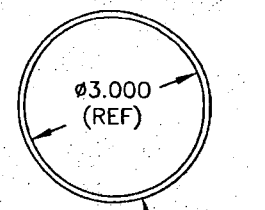
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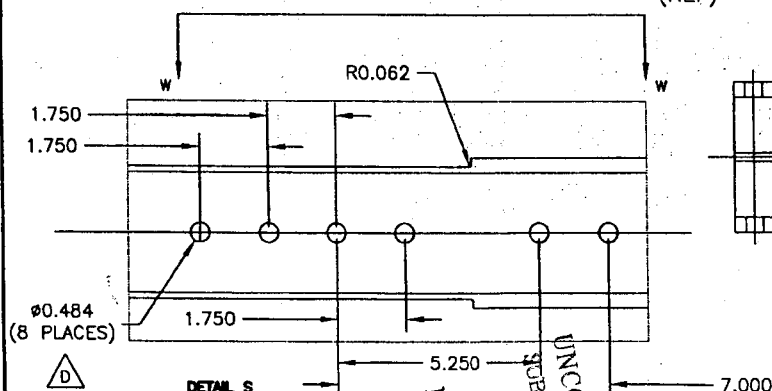
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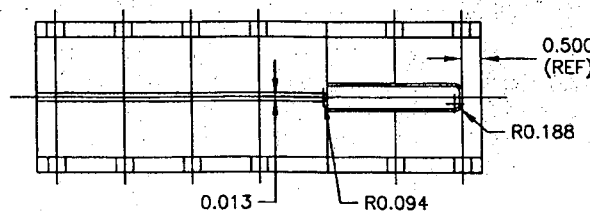
SECTION Q-Q  
(SCALE 1:2)



SECTION R-R  
(SCALE 1:2)



DETAIL S  
(SCALE 1:3)



VIEW W-W  
(SCALE 1:3)

07.03.26 PH  
UNDER REVIEW  
07.01.15 OLL

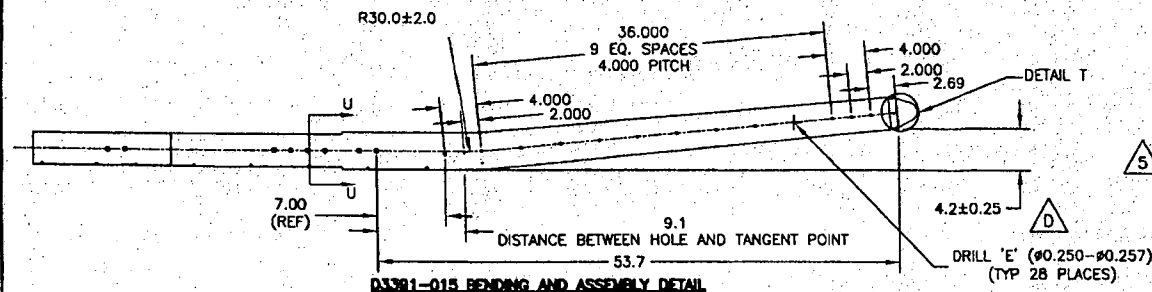
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26.05.03

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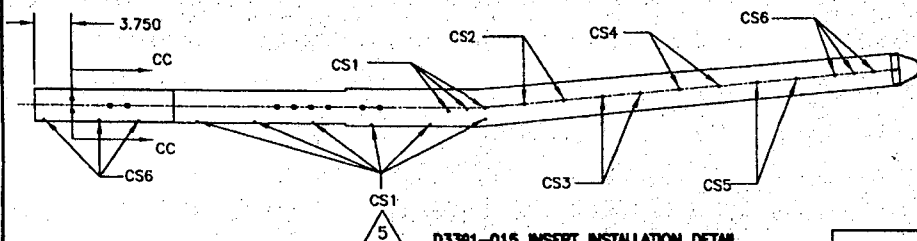
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CHECKED H	APPROVED H	DRAWING NO. D3391	SHEET 4 OF 5
DATE 06.04.25	TITLE 412 FLOAT SKIDTUBE	SCALE 1:12	

NO  
WORK ORDER  
30927  
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**D3391-015 BENDING AND ASSEMBLY DETAIL**



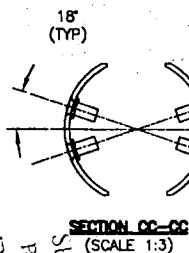
**D3391-015 INSERT INSTALLATION DETAIL (SEE TABLE)**

C'SINK AND INSTALL AESS10KBXXX AND/OR NAS1330C3KBXXX IN HOLES MARKED CS1-CS6 AS FOLLOWS

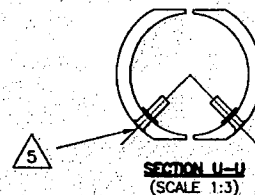
HOLES MARKED	QTY D3391-015	QTY D3391-025	C'SINK	P/N
CS1	18	14	Ø0.425	AESS10KB366
CS2	2	2	Ø0.391	AESS10KB366
CS3	2	2	Ø0.391	NAS1330C3KE316
CS4	2	2	Ø0.391	NAS1330C3KE266
CS5	2	2	Ø0.391	NAS1330C3KE216
CS6	12	8	Ø0.391	NAS1330C3KE166

**D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST**

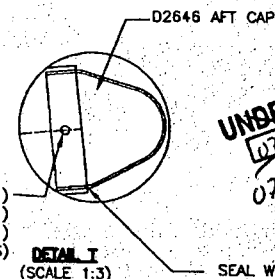
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
10	14	AESS10KB366	INSERT
4	2	NAS1330C3KB316	INSERT
4	2	NAS1330C3KB266	INSERT
4	2	NAS1330C3KB216	INSERT
12	8	NAS1330C3KB166	INSERT
4	2	NAS1330C4KB151	INSERT
2	2	AN3C4A	BOLT
2	2	NAS1515H3L	WASHER
2	2	AN960C10L	WASHER



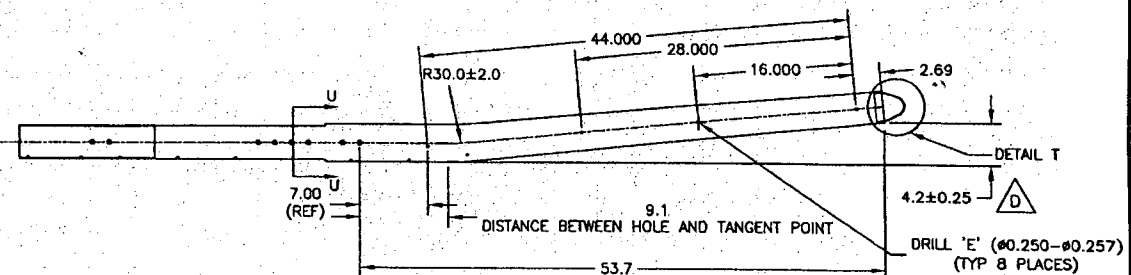
DRILL 'O' (#0.332-#0.338)  
C'SINK (#0.529X1000)  
NAS1330C4KB151 INSERT (1)  
(4 PLACES)



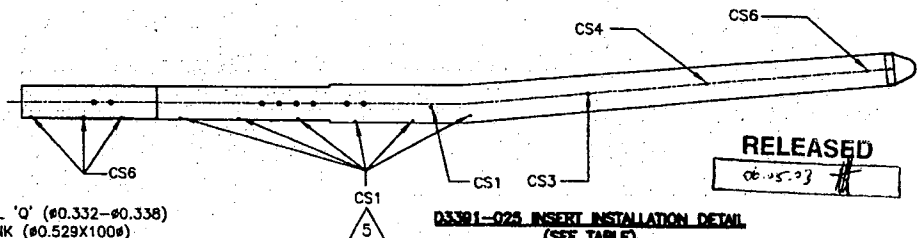
AN3C4A BOLT (1)  
NAS1515H3L WASHER (1)  
AN960C10L WASHER (1)  
(2 PLACES)



**UNDER REVIEW**  
07-02-26  
PH



**D3391-025 BENDING AND ASSEMBLY DETAIL**



**D3391-025 INSERT INSTALLATION DETAIL (SEE TABLE)**

**RELEASED**  
06-05-23

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